II. REMARKS

Independent claims 23 and 26 have been amended to recite "a maximum thickness exceeding one half of the first distance" as supported by Figure 6 as originally filed.

The present amendment adds no new matter to the above-captioned application.

A. The Invention

The present invention pertains to an apparatus for generating and feeding moisture, such as may be employed to generate moisture during the production of semiconductors. In particular, in accordance with an embodiment of the present invention, an apparatus for generating and feeding moisture is provided that includes the features recited by independent claim 1. In accordance with another embodiment of the present invention, an apparatus for generating and feeding moisture is provided that includes the features recited by independent claim 23. In accordance with still another embodiment of the present invention, an apparatus for generating and feeding moisture is provided that includes the features recited by independent claim 26. In accordance with still another embodiment of the present invention, an apparatus for generating and feeding moisture is provided that includes the features recited by independent claim 28. Various other embodiments, in accordance with the present invention, are provided in the dependent claims.

An advantage of the various embodiments of the present invention is that an apparatus for generating and feeding moisture is provided that generates and feeds moisture of high purity while eliminating the possibility of spontaneous ignition of hydrogen gas.

B. The Rejections

Claims 23, 25, 26, 30-33, 35 and 36 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 1, 22, 28, 34 and 37 stand rejected under the judicially-created doctrine of obviousness-type double patenting as unpatentable over claims 1-10 of U.S. Patent 6,919,056 to Ohmi et al. [hereinafter the "Ohmi'056 Patent"] in view of Ohmi et al. (EP 0 878 443) [hereinafter the "Ohmi'443 Document"]. Claims 23, 25, 26, 30-33, 35 and 36 stand rejected under the judicially-created doctrine of obviousness-type double patenting as unpatentable over claims 1-20 of U.S. Patent 7,008,598 to Ohmi et al. [hereinafter the "Ohmi'598 Patent"] in view of the Ohmi'443 Document.

Applicants respectfully traverse the present rejections and request reconsideration and allowance of the claims of the above-captioned application for the following reasons.

C. Applicants' Arguments

i. Rejections Under 35 U.S.C. § 112, First Paragraph

The Examiner asserts that the limitation of independent claims 23 and 26, "the plate has a...thickness exceeding one half of the first distance," is not supported by the drawings, in particular Figure 6, because (1) the thickness of the plate does not exceed one half of the first distance at its periphery although the Examiner admits that "the thickness of the plate may appear to exceed one half the first distance at its center," and (2) "Patent Office drawings cannot be relied upon for detail as to disclosure since they are not to scale." (Office Action, dated May 10, 2006, at 3, lines 7-23). The Examiner's contentions are untenable and should be withdrawn for the following reasons.

First, independent claims 23 and 26 have been amended to recite that the "plate" has "a maximum thickness exceeding one half of the first distance" as supported by Figure 6 as

originally filed. As amended, claims 23 and 26 take into account that the "plate" does not have a uniform thickness and requires only that the "maximum thickness" of the plate exceed one half the first distance as is clearly shown in Figure 6.

Second, the contention that Applicants' drawings are not "to scale" is both erroneous and immaterial. Attached herewith is a Second Declaration Under Rule 132, executed by Keiichi Hasegawa (hereafter, the "Second Hasegawa Declaration), which factually establishes that the scale of Figure 6 is immaterial to the limitation wherein the "plate" has a "maximum thickness exceeding one half of the first distance" wherein the "first distance" is the "distance separating the material gas supply passage and the moisture outlet passage" as recited by claims 23 and 26.

As Mr. Hasegawa testifies, Figure 12 is provided with a scale (i.e., a 1 cm unit), and from Figure 12 a person of ordinary skill in the art can reasonably infer an approximate scale for Figure 6 (See Second Hasegawa Declaration, ¶¶ 7 and 9). However, scale is immaterial to the recited limitation wherein the "plate" has "a maximum thickness exceeding one half of the first distance" because this limitation pertains to a dimensionless ratio (Second Hasegawa Declaration, ¶¶ 4-6 and 9).

For all of the above reasons, the Examiner's contention that Figure 6 does not teach the limitation wherein the "plate" has "a maximum thickness exceeding one half of the first distance" is controverted by factual evidence.

It is a well-established proposition by the Federal Circuit that a drawing alone may provide a written description of the invention, sufficient to satisfy statutory requirements, when the drawing discloses the claimed invention to one skilled in the art. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1565 (Fed. Cir. 1991). In Vas-Cath, the court found that a drawing in a design application could support a later utility application, and that the lower court erred in "applying a legal standard that essentially required the drawings of the '081

design application to necessarily exclude all diameters other than those within the claimed range." Id. The facts in the present application are analogous to those in Vas-Cath, which is controlling law.

In view of the Second Hasegawa Declaration submitted herewith and the established law of written description, Applicants respectfully traverse the rejections under § 112, first paragraph, and request reconsideration and withdrawal of same.

ii. Rejections Under the Judicially-Created Double Patenting Doctrine

The Federal Circuit has ruled that in order to justify a double patenting rejection an analysis of the claims at issue are required, and not an analysis limited to the disclosure of the patents whose claims are relied upon to demonstrate double patenting. General Foods Corp. v. Studiengesellschaft Kohle mbH, 23 U.S.P.Q.2d 1839, 1846 (Fed. Cir. 1992). The disclosure of the patents cited in support of the double patenting rejection cannot be used as though they were prior art. Id. In particular, the Federal Circuit has held that an obviousness-type double patenting rejection involves two inquires: first, is the same invention claimed twice, and second, if not, does the pending claim define merely an obvious variation of the patented claim. In re Goodman, 29 U.S.P.Q.2d 2010, 2016 (Fed. Cir. 1993).

In the present case, the Examiner has not established a prima facie case of obviousness-type double patenting because the Examiner has not compared the claims of the Ohmi'056 Patent and the Ohmi'598 Patent to the claims of the present application. However, to facilitate prosecution, Applicants provide such a comparison in the Tables that follow.

Claims of the Ohmi'056 Patent

Claims 1 and 28 of the present application are the only independent claims alleged by the Examiner to be unpatentable in view of claims 1-10 of the Ohmi'056 Patent in view of the

Ohmi'443 Document. Claim 1 of the Ohmi'056 Patent is the only independent claim. In order to overcome the Examiner's obvious-type double patenting rejection, all Applicants need establish is that the subject matter of claims 1 and 28 of the present invention, when compared to claim 1 of the Ohmi'056 Patent, has not been claimed twice and that the pending claims do not define merely an obvious variation of the patented claims in view of the Ohmi'443 Document. The subject matter of claims 1 and 28 of the present invention are compared to the subject matter of claim 1 of the Ohmi'056 Patent in view of the Ohmi'443 Document in Tables I and II, respectively, below.

TABLE I

U.S. Patent 6,919,056 B2	U.S. Patent Application No. 09/773,605
Claim 1. A reactor for generating moisture, comprising:	Claim 1. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, said reactor shell comprising: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature of not higher than 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature of not higher than 450°C;
wherein an interior space is formed with said reactor structural component on the inlet side and said reactor structural component on the outlet side disposed opposite each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained].	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
a gas feed port engaged with said reactor structural component on the inlet side;	a first reactor structural component having a material gas supply joint defining a material

	gas supply passage;
a moisture gas take-out port engaged with said reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first reactor structural component and the second reactor structural component are mated to form a reactor shell having an interior space, and wherein the second reactor structural component defines an inside wall surface;
an inlet reflector disposed on the inside wall of said reactor structural component on the inlet side, positioned opposite to said gas feed port in the interior space of the reactor;	a first reflector having an outer edge and disposed in the interior space to face the material gas supply passage;
an outlet reflector disposed on the inside wall of the said reactor structural component on the outlet side, positioned opposite to said moisture gas take-out port in the interior space of the said reactor; and	a second reflector having an outer edge and disposed in the interior space to face the moisture outlet passage,
[No requirement that the inlet reflector and the outlet reflector be identical flat plates symmetrically disposed in the interior space]	wherein the first reflector and the second reflector are identical flat plates symmetrically disposed in the interior space, and the first reflector and the second reflector each include a beveled peripheral portion inclined in cross-section;
	wherein the beveled peripheral portion is such that a distance between each first or second reflector and its respective closest first or second structural component is increasing in a direction towards the outer edge of the reflector;
a platinum coat catalyst layer formed on the inside wall of said reactor structural component on the outlet side;	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
wherein hydrogen and oxygen are fed into the interior space of said reactor through said gas feed port and brought into contact with said platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting hydrogen and oxygen into water in a non-combustion state; wherein	
a round recession with a flat bottom is formed on inside walls of said reactor	**[No round recession]**

structural component on the inlet side and said reactor structural component on the outlet side;	
wherein there is a tapered portion formed at peripheral edge portions of said inlet reflector facing the inside wall of said reactor structural component on the inlet side and said outlet reflector facing the inside wall of said reactor structural component on the outlet side;	
and wherein a gap is formed between said inlet reflector and the inside wall of said reactor structural component on the inlet side, and a gap is formed between said outlet reflector and the inside wall of said reactor structural component on the outlet side, and	**[No gap required between the first reflector and the first reactor structural component and between the second reflector and the second reactor structural component]**
wherein there is no filter in the interior space.	**[This limitation is not present** so this apparatus may include a filter in the interior space**]**

TABLE II

U.S. Patent 6,919,056 B2	U.S. Patent Application No. 09/773,605
Claim 1. A reactor for generating moisture, comprising:	Claim 28. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, said reactor shell comprising: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature set in the range of 300°C to 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature set in the range of 300°C to 450°C;
wherein an interior space is formed with said reactor structural component on the inlet side and said reactor structural component on the outlet side disposed opposite each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises

internal high pressure in the reactor is maintained].	one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
a gas feed port engaged with said reactor structural component on the inlet side;	a first reactor structural component having a material gas supply joint defining a material gas supply passage;
a moisture gas take-out port engaged with said reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a reactor shell having an interior space, and the second structural component defines an inside wall surface;
an inlet reflector disposed on the inside wall of said reactor structural component on the inlet side, positioned opposite to said gas feed port in the interior space of the reactor;	a first reflector having an outer edge and disposed in the interior space;
an outlet reflector disposed on the inside wall of the said reactor structural component on the outlet side, positioned opposite to said moisture gas take-out port in the interior space of the said reactor; and	a second reflector having an outer edge and disposed in the internal space to face the moisture outlet passage,
[No requirement that the inlet reflector and the outlet reflector be identical flat plates symmetrically disposed in the interior space]	wherein the first reflector is disposed in the internal space to face the material gas supply passage, and the first reflector and the second reflector are identical flat plates symmetrically disposed in the interior space, and the first reflector and the second reflector each include a beveled peripheral portion inclined in cross-section;
	wherein the beveled peripheral portion is such that a distance between each first or second reflector and its respective closest first or second structural component is increasing in a direction towards the outer edge of the reflector;
a platinum coat catalyst layer formed on the inside wall of said reactor structural component on the outlet side;	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
wherein hydrogen and oxygen are fed into the interior space of said reactor through said gas feed port and brought into contact with	

said platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting hydrogen and oxygen into water in a non-combustion state; wherein	
a round recession with a flat bottom is formed on inside walls of said reactor structural component on the inlet side and said reactor structural component on the outlet side;	**[No round recession]**
wherein there is a tapered portion formed at peripheral edge portions of said inlet reflector facing the inside wall of said reactor structural component on the inlet side and said outlet reflector facing the inside wall of said reactor structural component on the outlet side;	
and wherein a gap is formed between said inlet reflector and the inside wall of said reactor structural component on the inlet side, and a gap is formed between said outlet reflector and the inside wall of said reactor structural component on the outlet side, and	**[No gap required between the first reflector and the first reactor structural component and between the second reflector and the second reactor structural component]**
wherein there is no filter in the interior space.	**[This limitation is not present** so this apparatus may include a filter in the interior space]

As demonstrated by Tables I and II, there are multiple differences, and mutually exclusive and/or missing elements, between claims 1 and 28 of the present invention and claim 1 of the Ohmi'056 Patent regardless of whether the subject matter of the Ohmi'443 Document may be properly combined with the subject matter of claims 1 and 28 (which is a point not conceded by the Applicants).

The Ohmi'443 Document

The Ohmi'443 Document teaches "method for generating moisture, reactor for generating moisture, method for controlling temperature of reactor for generating moisture, and method for forming platinum-coated catalyst layer" and in the embodiment of Figure 45, water-generating equipment is shown that includes mass flow controllers (MFC1 to MFC5), valves

(V_1 to V_5), temperature measuring thermocouples (TC_1 to TC_5), check valves (CV_1 to CV_5), filters (F_1 to F_3), reactor (33) and semiconductor manufacturing equipment (40), (page 19, lines 10-14). The Ohmi'443 Document does not teach, or suggest, that filter **F3** of the Ohmi'433 Document is of a kind that may operate to reduce pressure. Therefore, the Examiner has not shown that filter **F3** taught by the Ohmi'443 Document is a "means for reducing pressure" in accordance with claims 1 and 28 of the present application. Consequently, the combination of the teachings of the Ohmi'443 Document with the subject matter of claims 1 and 28 does not teach, or suggest, the "means for reducing pressure."

As evident from Tables I and II above, the Examiner has not shown that the same invention has been claimed twice, General Foods Corp. v. Studiengesellschaft Kohle mbH, 23 U.S.P.Q.2d at 1840, and it is clear from Tables I and II that the claims are not identical in scope. Also, claims 1 and 28 include a "process chamber" not recited in claim 1 of the Ohmi'056 Patent; therefore, the invention claimed by claim 1 of the Ohmi'056 Patent represents neither a genus nor a species of the invention claimed in claims 1 and 28 of the present application. Consequently, since no prima facie case of obviousness-type double patenting has been established by the Examiner the double patenting rejection must be withdrawn.

Claims of the Ohmi'598 Patent

Claims 23 and 26 of the present application are the only independent claims alleged by the Examiner to be unpatentable in view of claims 1-20 of the Ohmi'598 Patent in view of the Ohmi'443 Document. Claims 1, 11 and 20 of the Ohmi'598 Patent are the only independent claims. In order to overcome the Examiner's obvious-type double patenting rejection, all Applicants need establish is that the subject matter of claims 23 and 26 of the present invention, when compared to claims 1, 11 and 20 of the Ohmi'598 Patent, has not been claimed twice and

that the pending claims do not define merely an obvious variation of the patented claims in view of the Ohmi'443 Document. The subject matter of claims 23 and 26 of the present invention are compared to the subject matter of claims 1, 11 and 20 of the Ohmi'598 Patent in view of the Ohmi'443 Document in Tables III and VIII, below.

TABLE III

U.S. Patent 7,008,598 B2	U.S. Patent Application No. 09/773,605
Claim 1. A reactor for generating moisture, comprising:	Claim 23. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, wherein said reactor shell comprises: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature of not higher than 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature of not higher than 450°C;
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained].	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
wherein an interior space is formed with said reactor structural component on the inlet side and said reactor structural component on the outlet side disposed opposite to each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
a gas feed port engaged with said reactor structural component on the inlet side;	a first reactor structural component having a material gas supply joint defining a material gas supply passage;
a moisture gas take-out port engaged with said reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a

	reactor shell having an interior space,
[No requirement that there be a first distance separating a material gas supply passage and a moisture outlet passage]	wherein the interior space is dimensioned to provide a first distance separating the material gas supply passage and the moisture outlet passage, and wherein the second component defines an inside wall surface;
a reflector positioned opposite said gas feed port and said moisture gas take-out port in the interior space of said reactor; and **[No requirement that the reflector be a thick plate]**	a reflector having an outer edge and disposed in the interior space, wherein the reflector is a thick plate and includes a peripheral portion inclined in cross-section;
	wherein the beveled peripheral portion is such that a distance between the reflector and the second reactor structural component is increasing in a direction towards the outer edge of the reflector;
[No maximum thickness defined for the reflector]	wherein the plate has a maximum thickness exceeding one half of the first distance;
a platinum coat catalyst layer formed on the inside wall of said reactor structural component on the outlet side;	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
wherein hydrogen and oxygen are fed into the interior space of said reactor through said gas feed port and brought into contact with said platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting the hydrogen and oxygen into water in a non-combustion state; wherein	
a round recession with a flat bottom is formed on inside walls of said reactor structural component on the inlet side and said reactor structural component on the outlet side;	**[No round recession]**
wherein the outside diameter of said reflector is slightly smaller than the inside diameter of the recession; wherein a taper is formed on the peripheral edge portion of said reflector on the side facing said reactor structural component on the outlet side;	
and wherein a gap is formed between said reflector and the inside wall of said reactor structural component on the outlet side; and	**[No gap required between the reflector and the inside wall of the reactor structural component on the outlet side]**
wherein there is no filter in the interior space.	**[This limitation is not present** so this

	apparatus may include a filter in the interior space]

TABLE IV

U.S. Patent 7,008,598 B2	U.S. Patent Application No. 09/773,605
Claim 11. A reactor for generating moisture, comprising:	Claim 23. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, wherein the reactor shell comprises: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature of not higher than 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature of not higher than 450°C;
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained].	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
wherein an interior space is formed with the reactor structural component on the inlet side and the reactor structural component on the outlet side disposed opposite to each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
a gas feed port engaged with the reactor structural component on the inlet side, wherein the gas feed port is provided with a material gas mixing and feeding unit for feeding a mixed gas of hydrogen and oxygen;	a first reactor structural component having a material gas supply joint defining a material gas supply passage; **[There is no material gas mixing and feeding unit]**
a moisture gas take-out port engaged with the reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a reactor shell having an interior space,
[No requirement that there be a first distance separating a material gas supply passage and a moisture outlet passage]	wherein the interior space is dimensioned to provide a first distance separating the material gas supply passage and the moisture

	outlet passage, and wherein the second component defines an inside wall surface;
a reflector positioned opposite the gas feed port and the moisture gas take-out port in the interior space of the reactor; and **[No requirement that the reflector be a thick plate]**	a reflector having an outer edge and disposed in the interior space, wherein the reflector is a thick plate and includes a peripheral portion inclined in cross-section;
	wherein the beveled peripheral portion is such that a distance between the reflector and the second reactor structural component is increasing in a direction towards the outer edge of the reflector;
[No maximum thickness defined for the reflector]	wherein the plate has a maximum thickness exceeding one half of the first distance;
a platinum coat catalyst layer formed on the inside wall of the reactor structural component on the outlet side; wherein	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
a round recession with a flat bottom is formed on inside walls of the reactor structural component on the inlet side and the reactor structural component on the outlet side;	**[No round recession]**
wherein the outside diameter of the reflector is slightly smaller than the inside diameter of the recession;	
wherein a taper is formed on the peripheral edge portion of the reflector on the side facing the reactor structural component on the outlet side;	
and wherein a gap is formed between the reflector and the inside wall of the reactor structural component on the outlet side; and	**[No gap required between the reflector and the inside wall of the reactor structural component on the outlet side]**
wherein hydrogen and oxygen are fed into the interior space of the reactor through the gas feed port and brought into contact with the platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting the hydrogen and oxygen into water in a non-combustion state.	

TABLE V

U.S. Patent 7,008,598 B2	U.S. Patent Application No. 09/773,605
Claim 20. A reactor for generating moisture, comprising:	Claim 23. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, wherein the reactor shell comprises: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature of not higher than 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature of not higher than 450°C;
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained].	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
wherein an interior space is formed with the reactor structural component on the inlet side and the reactor structural component on the outlet side disposed opposite to each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
a gas feed port engaged with the reactor structural component on the inlet side;	a first reactor structural component having a material gas supply joint defining a material gas supply passage;
a moisture gas take-out port engaged with the reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a reactor shell having an interior space,
[No requirement that there be a first distance separating a material gas supply passage and a moisture outlet passage]	wherein the interior space is dimensioned to provide a first distance separating the material gas supply passage and the moisture outlet passage, and wherein the second component defines an inside wall surface;
a reflector positioned opposite the gas feed port and the moisture gas take-out port in the interior space of the reactor,	a reflector having an outer edge and disposed in the interior space, wherein the reflector is a thick plate and includes a peripheral portion inclined in cross-section;

	wherein the beveled peripheral portion is such that a distance between the reflector and the second reactor structural component is increasing in a direction towards the outer edge of the reflector;
	wherein the plate has a maximum thickness exceeding one half of the first distance;
wherein there is no filter in the interior space	**[This limitation is not present** so this apparatus may include a filter in the interior space]
and the reflector has a thickness of more than about ½ a thickness of the interior space; and	
a platinum coat catalyst layer formed on the inside wall of the reactor structural component on the outlet side;	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
wherein hydrogen and oxygen are fed into the interior space of said reactor through said gas feed port and brought into contact with said platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting the hydrogen and oxygen into water in a non-combustion state.	

TABLE VI

U.S. Patent 7,008,598 B2	U.S. Patent Application No. 09/773,605
Claim 1. A reactor for generating moisture, comprising:	Claim 26. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, wherein said reactor shell comprises: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature set in the range of 300°C to 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature set in the range of 300°C to 450°C;
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said

that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained].	reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
wherein an interior space is formed with said reactor structural component on the inlet side and said reactor structural component on the outlet side disposed opposite to each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
a gas feed port engaged with said reactor structural component on the inlet side;	a first reactor structural component having a material gas supply joint defining a material gas supply passage;
a moisture gas take-out port engaged with said reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a reactor shell having an interior space,
[No requirement that there be a first distance separating a material gas supply passage and a moisture outlet passage]	wherein the interior space is dimensioned to provide a first distance separating the material gas supply passage and the moisture outlet passage, and wherein the second component defines an inside wall surface;
a reflector positioned opposite said gas feed port and said moisture gas take-out port in the interior space of said reactor; and	a first reflector disposed in the interior space,
	wherein the first reflector is a thick plate that includes a peripheral portion inclined in cross-section and a maximum thickness exceeding one half of the first distance;
a platinum coat catalyst layer formed on the inside wall of said reactor structural component on the outlet side;	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
wherein hydrogen and oxygen are fed into the interior space of said reactor through said gas feed port and brought into contact with said platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting the hydrogen and oxygen into water in a non-combustion state; wherein	

a round recession with a flat bottom is formed on inside walls of said reactor structural component on the inlet side and said reactor structural component on the outlet side;	**[No round recession]**
wherein the outside diameter of said reflector is slightly smaller than the inside diameter of the recession; wherein a taper is formed on the peripheral edge portion of said reflector on the side facing said reactor structural component on the outlet side;	
and wherein a gap is formed between said reflector and the inside wall of said reactor structural component on the outlet side; and	**[No gap required between the reflector and the inside wall of the reactor structural component on the outlet side]**
wherein there is no filter in the interior space.	**[This limitation is not present** so this apparatus may include a filter in the interior space**]**

TABLE VII

U.S. Patent 7,008,598 B2	U.S. Patent Application No. 09/773,605
Claim 11. A reactor for generating moisture, comprising:	Claim 26. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, wherein the reactor shell comprises: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature set in the range of 300°C to 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature set in the range of 300°C to 450°C;
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained**]**.	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
wherein an interior space is formed with the reactor structural component on the inlet side and the reactor structural component on the outlet side disposed opposite to each other	**[No requirement that the first and second reactor structural components are joined together by welding]**

and joined together by welding;	
a gas feed port engaged with the reactor structural component on the inlet side, wherein the gas feed port is provided with a material gas mixing and feeding unit for feeding a mixed gas of hydrogen and oxygen;	a first reactor structural component having a material gas supply joint defining a material gas supply passage; **[There is no material gas mixing and feeding unit]**
a moisture gas take-out port engaged with the reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a reactor shell having an interior space,
[No requirement that there be a first distance separating a material gas supply passage and a moisture outlet passage]	wherein the interior space is dimensioned to provide a first distance separating the material gas supply passage and the moisture outlet passage, and wherein the second component defines an inside wall surface;
a reflector positioned opposite the gas feed port and the moisture gas take-out port in the interior space of the reactor; and	a first reflector disposed in the interior space,
	wherein the first reflector is a thick plate that includes a peripheral portion inclined in cross-section and a maximum thickness exceeding one half of the first distance;
a platinum coat catalyst layer formed on the inside wall of the reactor structural component on the outlet side; wherein	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
a round recession with a flat bottom is formed on inside walls of the reactor structural component on the inlet side and the reactor structural component on the outlet side;	**[No round recession]**
wherein the outside diameter of the reflector is slightly smaller than the inside diameter of the recession;	
wherein a taper is formed on the peripheral edge portion of the reflector on the side facing the reactor structural component on the outlet side;	
and wherein a gap is formed between the reflector and the inside wall of the reactor structural component on the outlet side; and	**[No gap required between the reflector and the inside wall of the reactor structural component on the outlet side]**
wherein hydrogen and oxygen are fed into	

the interior space of the reactor through the gas feed port and brought into contact with the platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting the hydrogen and oxygen into water in a non-combustion state.	

TABLE VIII

U.S. Patent 7,008,598 B2	U.S. Patent Application No. 09/773,605
Claim 20. A reactor for generating moisture, comprising:	Claim 26. An apparatus for generating and feeding moisture, comprising:
a reactor shell with an inlet side and an outlet side, wherein the reactor shell comprises: a reactor structural component on the inlet side; and a reactor structural component on the outlet side; **[No requirement that the reactor generates moisture at a temperature set in the range of 300°C to 450°C]**	a reactor having an upstream gas inlet side, a downstream moisture outlet side and a catalyst for generating moisture from hydrogen and oxygen, wherein the reactor generates moisture from hydrogen and oxygen by catalytic reaction at a temperature set in the range of 300°C to 450°C;
[No means for reducing pressure as conceded by Examiner. Examiner contends that this limitation is taught by the Ohmi'443 Document; however, the filter **F3** shown in Fig. 45 of the Ohmi'443 Document does not necessarily reduce pressure of moisture leaving and fed from the reactor while an internal high pressure in the reactor is maintained].	means for reducing pressure provided on the downstream side of the reactor, and disposed so that moisture leaving and fed from said reactor is reduced in pressure by the means for reducing pressure while an internal high pressure in the reactor is maintained, wherein the means for reducing pressure comprises one or more components selected from the group consisting of an orifice, a valve, a capillary and a filter;
wherein an interior space is formed with the reactor structural component on the inlet side and the reactor structural component on the outlet side disposed opposite to each other and joined together by welding;	**[No requirement that the first and second reactor structural components are joined together by welding]**
a gas feed port engaged with the reactor structural component on the inlet side;	a first reactor structural component having a material gas supply joint defining a material gas supply passage;
a moisture gas take-out port engaged with the reactor structural component on the outlet side;	a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the first structural component and the second structural component are mated to form a reactor shell having an interior space,
[No requirement that there be a first	wherein the interior space is dimensioned to

distance separating a material gas supply passage and a moisture outlet passage]	provide a first distance separating the material gas supply passage and the moisture outlet passage, and wherein the second component defines an inside wall surface;
a reflector positioned opposite the gas feed port and the moisture gas take-out port in the interior space of the reactor,	a first reflector disposed in the interior space,
	wherein the first reflector is a thick plate that includes a peripheral portion inclined in cross-section and a maximum thickness exceeding one half of the first distance;
wherein there is no filter in the interior space	**[This limitation is not present** so this apparatus may include a filter in the interior space]
and the reflector has a thickness of more than about ½ a thickness of the interior space; and	
a platinum coat catalyst layer formed on the inside wall of the reactor structural component on the outlet side;	wherein the catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component; and
[No process chamber]	a process chamber, wherein the reactor is connected to feed moisture gas to the process chamber, wherein the moisture gas fed into the process chamber is reduced in pressure by the means for reducing pressure.
wherein hydrogen and oxygen are fed into the interior space of said reactor through said gas feed port and brought into contact with said platinum coat catalyst layer to activate the reactivity of the hydrogen and oxygen, thereby reacting the hydrogen and oxygen into water in a non-combustion state.	

As demonstrated by Tables III to VIII, there are multiple differences, and mutually exclusive and/or missing elements, between claims 23 and 26 of the present invention and claims 1, 11 and 20 of the Ohmi'598 Patent regardless of whether the subject matter of the Ohmi'443 Document may be properly combined with the subject matter of claims 23 and 26 (which is a point not conceded by the Applicants).

As discussed above, the Ohmi'443 Document teaches "method for generating moisture, reactor for generating moisture, method for controlling temperature of reactor for generating moisture, and method for forming platinum-coated catalyst layer" but does not teach, or

suggest, that filter **F3** of the Ohmi'433 Document is operable to reduce pressure. Therefore, the Examiner has not shown that filter **F3** taught by the Ohmi'443 Document is a "means for reducing pressure" in accordance with claims 23 and 26 of the present application. Consequently, the combination of the teachings of the Ohmi'443 Document with the subject matter of claims 23 and 26 does not teach, or suggest, the "means for reducing pressure."

As evident from Tables III to VIII above, the Examiner has not shown that the same invention has been claimed twice, General Foods Corp. v. Studiengesellschaft Kohle mbH, 23 U.S.P.Q.2d at 1840, and it is clear from Tables III to VIII that the claims are not identical in scope. Also, claims 23 and 26 include a "process chamber" not recited in claims 1, 11 and 20 of the Ohmi'598 Patent; therefore, the invention claimed by claims 1, 11 and 20 of the Ohmi'598 Patent represents neither a genus nor a species of the invention claimed in claims 23 and 26 of the present application. Consequently, since no prima facie case of obviousness-type double patenting has been established by the Examiner the double patenting rejection must be withdrawn.

For all of the above reasons, the Examiners rejection of independent claims 1, 23, 26 and 28 under the judicially-created doctrine of obviousness-type double patenting is untenable and must be withdrawn.

iii. The Examiner's "Official Notice"

The Examiner contends that "bolts are well known means for fastening two elements together" and takes "Official Notice" (Office Action, dated May 10, 2006, at 6, lines 2-4). Applicants respectfully traverse the "Official Notice" on the grounds that the notice is too broad and fails to provide a justification for its application to this case. Applicants previously pointed out in Amendment (D), filed February 27, 2006, that bolts are used in the present invention to secure the reflector to its structural component because securement by welding

may damage the treated inner surface of a structural component. In the alternative, if welding occurs before surface treatment, it becomes difficult to perform such surface treatment in the narrow confines with the reflector fixed in place. The use of bolts in the present invention, as recited in claims 34 to 37, overcomes this problem. Thus, bolts are employed for nonobvious reasons.

In view of Applicants' traverse, the Examiner is now obligated to provide a factual basis (i.e., a prior art reference) in place of the "Official Notice" because, under the Administrative Procedure Act, rejections must be based on evidence and not on conjecture. In re Lee, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002).

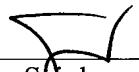
III. CONCLUSION

For all of the above reasons, claims 1, 22, 23, 25, 26, 28 and 30-37 are in condition for allowance, and a prompt notice of allowance is earnestly solicited.

Questions are welcomed by the below signed attorney of record for the Applicants.

Respectfully submitted,

GRIFFIN & SZIPL, P.C.



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